

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>H04B 7/005</b>		<b>A3</b>	(11) International Publication Number: <b>WO 96/09696</b>
			(43) International Publication Date: 28 March 1996 (28.03.96)
(21) International Application Number: <b>PCT/FI95/00516</b>		(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG).	
(22) International Filing Date: 21 September 1995 (21.09.95)			
(30) Priority Data: 944395 22 September 1994 (22.09.94) FI			
(71) Applicant (for all designated States except US): NOKIA TELECOMMUNICATIONS OY [FI/FI]; Mäkkylän puistotie 1, FIN-02600 Espoo (FI).			
(72) Inventors; and (75) Inventors/Applicants (for US only): HONKASALO, Harri [FI/FI]; Melkonkatu 8 B 29, FIN-00210 Helsinki (FI). JOLMA, Petri [FI/FI]; Harakkakuja 6 G 49, FIN-02600 Espoo (FI). LIIMATAINEN Jukka [FI/FI]; Torikatu 64 B 224, FIN-90120 Oulu (FI).			
(74) Agent: TEKNOPOLIS KOLSTER OY; Oy Kolster Ab, Iso Roobertinkatu 23, P.O. Box 148, FIN-00121 Helsinki (FI).			
		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Finnish).	
		(88) Date of publication of the international search report: 9 May 1996 (09.05.96)	
(54) Title: A METHOD FOR CONTROLLING TRANSMITTING POWER, AND A CELLULAR RADIO SYSTEM			
(57) Abstract			
<p>The invention relates to a method for controlling transmitting power in a cellular radio system comprising in each cell at least one base station (20) communicating with subscriber terminal equipments (21-22) located within its area, in which method the base station measures the power level of a signal received by it from a terminal equipment, and the terminal equipment measures the power level of a signal received by it from the base station, and reports the result to the base station. For enabling fast and accurate power control in the method of the invention, the base station (20) compares the measurement results transmitted by the terminal equipment with its own measurement results, and controls the transmitting power of the terminal equipment and its own transmitting power on the basis of the comparison of the measurement results.</p>		<pre>graph TD     MS21[MS 21] &lt;--&gt; 24  BTS20[BTS 20]     MS22[MS 22] &lt;--&gt; 25  BTS20     BTS20 -- 26 --&gt; BSC23[BSC 23]</pre>	

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgyzstan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GA	Gabon				

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 95/00516

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
<b>IPC6: H04B 7/005</b> According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
<b>IPC6: H04B, H04Q</b>		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
<b>SE,DK,FI,NO classes as above</b>		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0615353 A1 (ALCATEL RADIOTELEPHONE), 14 Sept 1994 (14.09.94), see the whole document, especially the Abstract and claims 1-14  --	1-5
X	US 5321721 A (T. YAMAURA ET AL.), 14 June 1994 (14.06.94), column 14, line 58 - column 15, line 20; column 18, line 40 - column 19, line 35  --	1-5
X	US 5003619 A (J.P. MORRIS ET AL.), 26 March 1991 (26.03.91), column 2, line 54 - column 3, line 32; column 6, line 9 - line 48  --	1-2,4-5
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
19 March 1996		21-03-1996
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer  Elisabet Aselius Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 95/00516

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9406217 A1 (MILLICOM HOLDINGS (UK) LTD.), 17 March 1994 (17.03.94), page 3, line 5 - line 35; page 5, line 24 - page 6, line 2  --	1-5
A	WO 9307702 A1 (QUALCOMM INCORPORATED), 15 April 1993 (15.04.93), abstract  --	1-5
A	WO 9209156 A1 (SCS MOBILECOM, INC.), 29 May 1992 (29.05.92), page 4, line 17 - line 33  -- -----	1-5

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

05/02/96

International application No.

PCT/FI 95/00516

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP-A1-	0615353	14/09/94	NONE		
US-A-	5321721	14/06/94	JP-A-	6014006	21/01/94
			JP-A-	5075571	26/03/93
			JP-A-	5075574	26/03/93
US-A-	5003619	26/03/91	NONE		
WO-A1-	9406217	17/03/94	NONE		
WO-A1-	9307702	15/04/93	AU-B-	654891	24/11/94
			AU-A-	3054392	03/05/93
			BG-A-	98704	31/05/95
			CA-A-	2120768	15/04/93
			EP-A-	0607359	27/07/94
			FI-A,D-	941637	08/06/94
			HU-A-	69842	28/09/95
			HU-D-	9400983	00/00/00
			JP-T-	7502631	16/03/95
			NO-A,D-	941264	08/06/94
			US-A-	5267262	30/11/93
			ZA-A-	9207539	07/07/93
WO-A1-	9209156	29/05/92	CA-A-	2091783	17/05/92
			EP-A,A-	0515610	02/12/92
			US-A-	5093840	03/03/92
			US-A-	5299226	29/03/94